

Application Number 10/657,867  
Amendment dated April 24, 2006  
Reply to Office Action of January 25, 2006

Amendments to the Claims:

Please cancel claims 1-20.

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1-20. (Cancelled)

21. (Previously Presented) A bipolar transistor comprising:

a semiconductor substrate of a first conductivity type;

a collector region of a second conductivity type, which is defined by isolation regions on the semiconductor substrate;

a first base semiconductor layer of the first conductivity type formed of a silicon germanium (SiGe) layer, which extends across the upper surface of the collector region to the upper surface of the isolation regions;

an emitter region of the second conductivity type formed on the first base semiconductor layer to contact the first base semiconductor layer in a region which is defined by emitter insulating layers formed on the first base semiconductor layer;

second base semiconductor layers of the first conductivity type formed of a silicon layer, which is formed on the portions of the first base semiconductor layer except for the portions having the emitter region and the emitter insulating layers;

base ohmic layers formed on the second base semiconductor layers;

an emitter electrode formed on the emitter region;

base electrodes formed on the second base semiconductor layers at both sides of the emitter electrode;

insulating layers formed between the isolation regions and the first base semiconductor layer, under the base electrodes; and

silicon layers formed between the insulating layers and the first base semiconductor layer.

22. (Previously Presented) The bipolar transistor of claim 21, wherein the second base semiconductor layers are formed of an epitaxial growing layer.
23. (Previously Presented) The bipolar transistor of claim 21, wherein the first conductivity type is p-type and the second conductivity type is n-type.
24. (Previously Presented) The bipolar transistor of claim 21, further comprising first selectively ion implanted collector (SIC) regions of the second conductivity type, which are formed at portions near the surface of the collector region and adjacent to the isolation regions.
25. (Previously Presented) The bipolar transistor of claim 24, further comprising a second SIC region of the second conductivity type, which is formed in a portion of the collector region under the emitter region.
26. (Previously Presented) The bipolar transistor of claim 21, wherein the base ohmic layers are formed of metal silicide.
27. (Previously Presented) The bipolar transistor of claim 26, wherein the base ohmic layers are formed of one of titanium silicide and cobalt silicide.
28. (Previously Presented) The bipolar transistor of claim 21, wherein the insulating layers are formed of one of oxide layers and nitride layers.